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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : B65D 21/06

A1

(11) International Publication Number: **WO 00/51900**

(43) International Publication Date: 8 September 2000 (08.09.00)

(21) International Application Number: PCT/SE00/00365

(22) International Filing Date: 25 February 2000 (25.02.00)

(30) Priority Data:
9900749-4 3 March 1999 (03.03.99) SE

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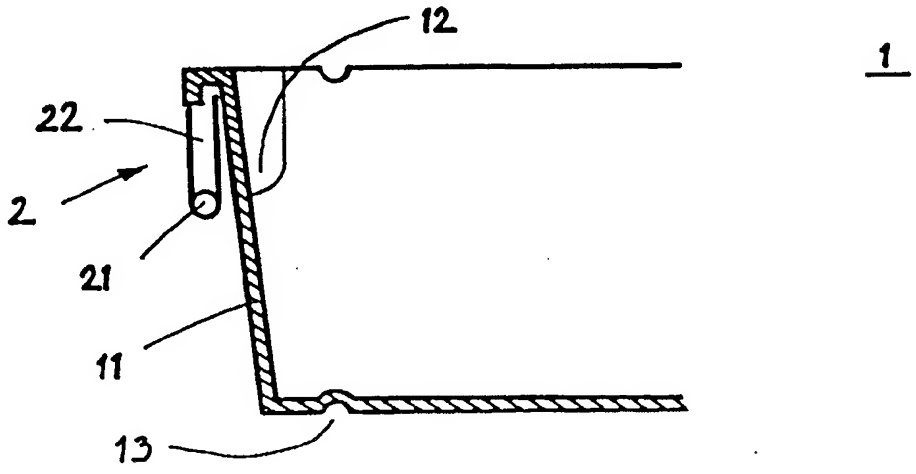
(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: MULTI-LEVEL STACK/NEST CONTAINER

(57) Abstract

A multi-level stack/nest container (1) provided with two bale arms (2), which bale arms (2) are provided with supporting members (21) and pivot members (22). The bale arms (2) may be positioned in at least three positions, which positions are one nesting position where containers (1) may be nested, one into the other, and at least two stacking positions situated at different levels where containers (1) may be stacked, one on top of the other. The bale arms (2) are placed at a distance from each one of two opposite side walls (11) when in the upper level position, in which position the container (1) is intended to carry light and voluminous goods. The bale arms (2) are placed adjacent to the same side walls (11) when in a lower level stacking position, in which position the container (1) is intended to carry heavy and compact goods.



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Multi-level stack/nest container.

The present invention relates to a so-called stack/nest container provided with so-called bale arms intended for stacking in at least two positions in addition to the nesting position.

Bale arm stack/nest containers has been in frequent use for a very long period of time. The bale arms are normally placed at the two short sides of the container. One problem with this type of containers is that the bale arms are either placed close to the short side walls whereby it is difficult to position containers to be stacked or, placed at a distance from the side walls which will render an inferior load handling capability. Bale arms placed close to the side walls and adjacent to the upper edge of the container will inevitably make it possible for a container stacked thereon to fall at an angle into the container below, either while stacking or during transport. The bale arm positioned at a distance from the side wall will be much more stable in respect of stackability, both during stacking and during transport. The disadvantage is, however, that the load will not be transferred in a preferred way through a stack of such containers, since the bale arm is placed at a distance from the side wall, and thereby at a distance from the corners. It is a well known fact that the corners are the load carrying part of a box-shaped structure.

According to the present invention, a multi-level stack/nest container provided with bale arms with excellent load handling capability and which is easy to pile into solid stacks, has been achieved. The invention relates to a multi-level stack/nest container provided with two bale arms. The bale arms are provided with supporting members and pivot members. The bale arms may be positioned in at least three positions. The positions are one nesting position where containers may be nested, one into the other, and at least two stacking positions situated at different levels where containers may be stacked, one on top of the other. The invention is characterised in that the bale arms are placed at a distance from each one of two opposite side walls when in the upper level position, in which position the container is intended to carry light and voluminous goods. The bale arms are

placed adjacent to the same side walls when in a lower level stacking position, in which position the container is intended to carry heavy and compact goods. The nesting position of the bale arm is suitably situated on the outside of the container.

The supporting members of the bale arms are preferably placed adjacent to the side walls and corners of a container stacked thereon and adjacent the side walls and corners of the container the same bale arms are a part of, when the bale arms are in the lower level stacking position. The load in a stack of such containers, stacked, one on top of the other, with the bale arms in the lower level position, is transferred through the stack in a more favourable manner by being carried by the corners of the containers.

The container is suitably provided with a lower level receiving means intended to receive and support the supporting members of the bale arms.

The base of the container is prefereably provided with recesses intended to receive the supporting members. The containers stacked, one on top of the other, is hereby guided when alligned vertically.

The recesses may, according to one embodiment of the invention, be extended. The supporting members hereby positions the container above by means of a first recess edge when in the upper level stacking position and positions the container above by means of a second recess edge when in the lower level stacking position

The invention is explained further together with enclosed drawings, showing an embodiment of the invention wherein,

-figure 1a - 1d show, schematically and in cross-section, an embodiment of a multi-level stack/nest container 1 according to the invention.

Figure 1a - 1d show, schematically and in cross-section, an embodiment of a steck/nest container 1 according to the invention. The container 1 is provided with two bale arms 2, which bale arms 2 are provided with supporting members 21 and pivot members 22. The bale arms 2 may be positioned in three positions. The positions are one nesting position (fig. 1a) where containers 1 may be nested, one

into the other, and two stacking positions (fig. 1b, 1c) situated at different levels where containers 1 may be stacked, one on top of the other. The bale arms 2 are placed at a distance from each one of two opposite side walls 11 when in the upper level position (fig. 1b), in which position the container 1 is intended to carry light and voluminous goods. The bale arms 2 are placed adjacent to the same side walls 11 when in a lower level stacking position (fig. 1c), in which position the container 1 is intended to carry heavy and compact goods. The supporting members 21 of the bale arms 2 are placed adjacent to the side walls 11 and corners of a container 1 stacked thereon and adjacent the side walls 11 and corners of the container 1 the same bale arms 2 are constituting a part of, when the bale arms 2 are in the lower level stacking position (fig. 1c). The load in a stack of such containers 1, stacked in the lower level position, is hereby transferred through the stack in a more favourable manner by being carried by the corners of the containers 1. The container 1 is further provided with a lower level receiving means 12 intended to receive and support the supporting members 21 of the bale arms 2. It is also possible to provide the base of the container with recesses 13 intended to receive the supporting members 21. Containers 1 stacked, one on top of the other, is guided when vertically alligned.

According to one embodiment (fig. 1d) of the invention the recesses 13 are extended. The supporting members 21 hereby positions the container 1 above by means of a first recess edge 13' when in the upper level stacking position. The supporting members 21 will position the container 1 above by means of a second recess edge 13" when in the lower level stacking position.

The invention is not limited to the embodiments shown, since it can be varied in different ways within the scope of the invention.

CLAIMS

1. A multi-level stack/nest container (1) provided with two bale arms (2), which bale arms (2) are provided with supporting members (21) and pivot members (22) and which bale arms (2) may be positioned in at least three positions, which positions are one nesting position where containers (1) may be nested, one into the other, and at least two stacking positions situated at different levels where containers (1) may be stacked, one on top of the other, c h a r a c t e r i s e d in that the bale arms (2) are placed at a distance from each one of two opposite side walls (11) when in the upper level position, in which position the container (1) is intended to carry light and voluminous goods and that the bale arms (2) are placed adjacent to the same side walls (11) when in a lower level stacking position, in which position the container (1) is intended to carry heavy and compact goods.

2. Container (1) according to claim 1, c h a r a c t e r i s e d in that the supporting members (21) of the bale arms (2) are placed adjacent to the side walls (11) and corners of a container (1) stacked thereon and adjacent the side walls (11) and corners of the container (1) the same bale arms (2) are constituting a part of when the bale arms (2) are in the lower level stacking position, wherein the load in a stack of such containers (1), stacked in the lower level position, is transferred through the stack in a more favourable manner by being carried by the corners of the containers (1).

3. Container (1) according to claim 1 or 2, c h a r a c t e r i s e d in that the container (1) is provided with a lower level receiving means (12) intended to receive and support the supporting members (21) of the bale arms (2).

4. Container (1) according to any of the claims 1 - 3, c h a r a c t e r i s e d in that the base of the container (1) is provided with recesses (13) intended to receive the supporting members (21), whereby containers (1) stacked, one on top of the other, is guided when vertically alligned.

5. Container (1) according to claim 4, c h a r a c t e r i s e d in that the recesses (13) are extended, whereby the supporting members (21) positions the container (1) above by means of a first recess edge (13') when in the upper level stacking position and whereby the supporting members (21) positions the container (1) above by means of a second recess edge (13") when in the lower level stacking position.

Fig. 1a

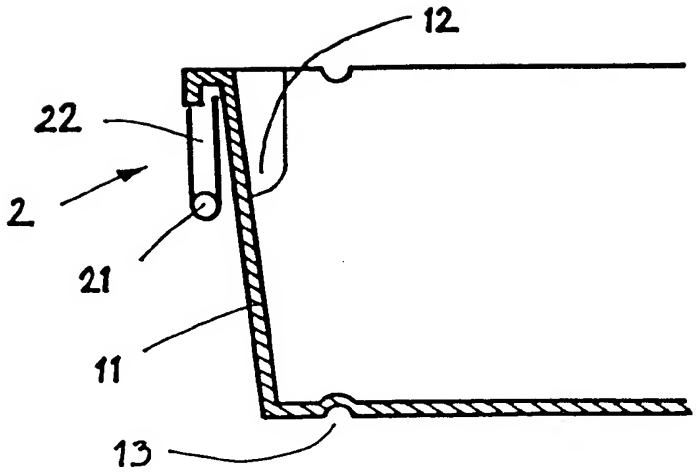


Fig. 1b

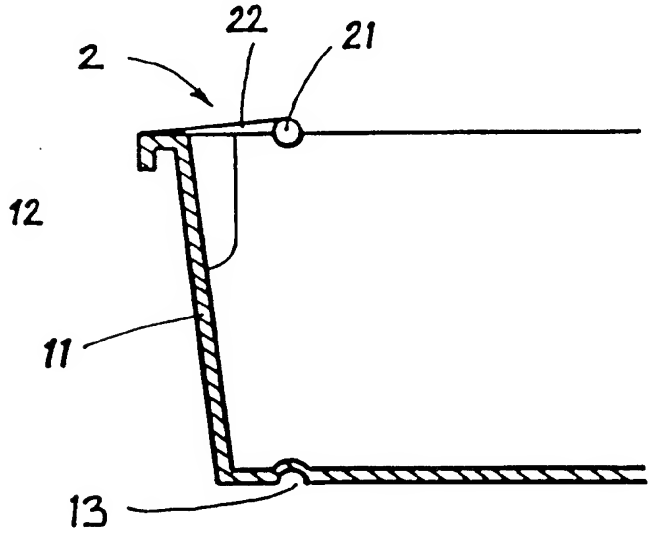


Fig. 1c

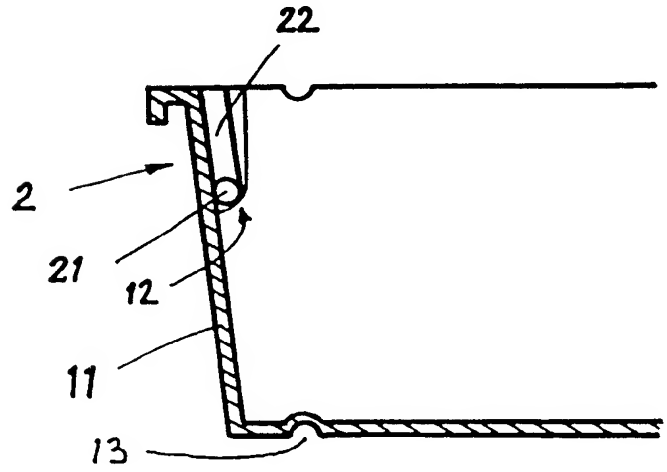
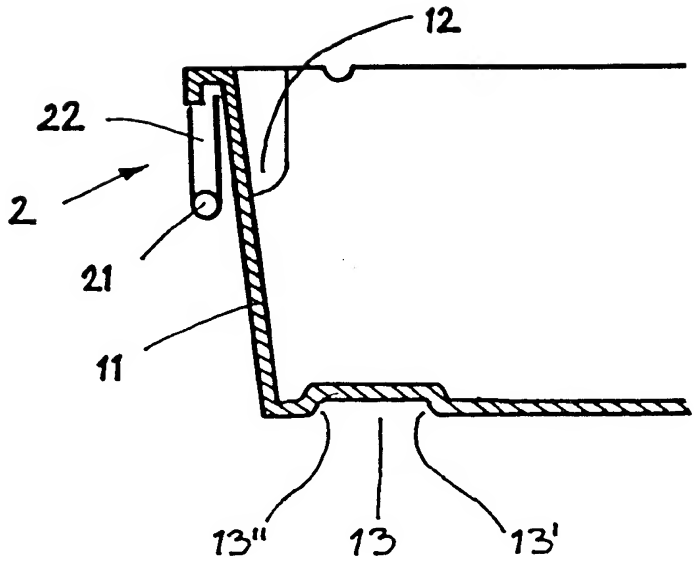


Fig.1d



INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 00/00365

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: B65D 21/06
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5494163 A (WILLIAM P. APPS), 27 February 1996 (27.02.96), column 4, line 24 - line 58, figures 1-6	1-5
X	US 3375953 A (A.W. MILLER, JR), 2 April 1968 (02.04.68), figures 3-5	1
A	GB 2264102 A (MCKECHNIE UK LIMITED), 18 August 1993 (18.08.93), figure 1, abstract	1-5
A	US 4573577 A (DANIEL R. MILLER), 4 March 1986 (04.03.86), figures 4-7, abstract	1-5

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4391369 A (EDWARD L. STAHL ET AL), 5 July 1983 (05.07.83), figures 3-6	1-5

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Information on patent family members

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PCT/SE 00/00365

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